

Two Studies on Ancient Ethnobotany

[Art and Artifact as Ethnobotanical Tools in the Ancient Near East with Emphasis on Psychoactive Plants](#), from *Ethnobotany: Evolution of a Discipline* edited by Richard Evans Schultes and Siri von Reis (Portland, Oregon, 1995), pp. 93-107, in 17 pdf pages.

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Art and Artifact as Ethnobotanical Tools in the Ancient Near East with Emphasis on Psychoactive Plants*

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(Portland, Oregon, 1995)

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While there is considerable research on agriculture of the ancient Near East, most of the writing has dealt with sustenance crops such as grains, pulses, dates, and others. Various practices in agriculture at an early date in this area have been discussed by modern writers, but reliance on silting still seems to be the most plausible explanation for a stabilized agriculture practice. Gathered plants are not excluded by the progressive movement into new agricultural modalities.

Most neglected, and still very controversial, are the several kinds of psychoactive plants employed by early peoples. It is suggested that art and artifact have been sources often overlooked in determining the ethnobotanical content of any early civilization. The suggestion is made that early civilizations in the area of the Fertile Crescent employed *Datura*, *Cannabis*, *Claviceps*, *Mandragora*, *Nymphaea*, *Vitis*, and possibly *Papaver* as medicaments and ritual entheogens. They are well revealed in the surviving art and artifacts of these civilizations. As many of the images are imprecise in their execution, identification must be made in the context in which they are represented and is therefore often conjectural.

In the sciences, ethnobotany is one of the most recent and rapidly expanding disciplines, as exemplified by two relatively new and important publications, the *Journal of Ethnopharmacology* and the *Journal of Ethnobiology*. These publications were born as it became abundantly evident that ethnobotanical articles were being buried in journals devoted to other disciplines; and, yet, more and more scientists were turning to this multifaceted study. Unlike the more conventional branches of science, ethnobotany relies upon a greater database than does any other scientific discipline. Anthropology, archeology, pharmacology, biochemistry, and the many areas that comprise biology are all components of the broad discipline of ethnobotany. The earlier term *economic botany* was something of a misnomer in that it implied only economic considerations of the plant sciences, although it often was used to cover courses and writings in the area now defined as ethnobotany.

At a time when many molecular biologists have almost forgotten the uses of the past, the ethnobotanist is assembling historical art and artifact as part of the database. Further [94] verification of assertions and hypotheses deriving from these sources may come from analytical chemistry or electron microscopy, but it is mandatory to have individuals well trained in diverse areas to bring together, and make sense of, the pieces left to us by former civilizations and contemporary civilizations threatened with extinction. To this end, we need ethnomusicologists, ethnomycologists, pharmacologists, analytical chemists, computer scientists, biochemists and, primarily, botanists who are well grounded in biology and have an interest in history.

It is important to note that the discipline of ethnobotany has been able to advance on the basis of two primary developments, both from the first half of the twentieth century: first, the evolution of a technology that allows rapid analysis of materials and data; and second, the discovery of ancient civilizations as something more than curiosities. The origins of Western civilization can be traced to the ancient Near East, which was unknown to the greatest of the Greek writers of antiquity and was regarded until late as a false start in the development of both art and science. We have preferred to think of our own civilization as having developed from Hellenic thought and

values. Despite the enormous accumulations of art and artifacts that were garnered during the nineteenth century, interpretation of these materials was not forthcoming. While the picture is still fragmentary, we now are able to interpret correctly much of what was formerly regarded as merely decorative.

It was the Neolithic revolution that initiated the ordered life of social stratification within settled communities. Following this, more complicated federations of communities rose in a city-state plexus that required political systems, agricultural priesthood, currency, and economic systems, and that permitted the development of the luxuries of art and writing. All of this happened about the fifth or fourth millennium B.C. in what has been called the Fertile Crescent of arable land surrounding the wilderness of Arabia. The area included Egypt, Palestine, Syria, and Mesopotamia, which, until the end of the fourth millennium [ca. 3000 B.C.], remained an unassimilated complex of simple villages with primitive agriculture and tribal principles rather than any ordered governments.

In a few generations perhaps the greatest transformation in the history of humankind took place. Writing appeared, monumental architecture rose from rubble, agriculture underwent revolutionary changes, governments replaced less-than-feudal states, and religion and science made their appearances. Like an estivation period followed by germination, a succession of cities grew, blossomed, and reached fruition. [In Western Asia,] Egypt and Mesopotamia were the luminaries of this great period of art, architecture, science, and engineering. Long before any written record appeared, these civilizations had produced sculpture and painting so imbued with information that they codify thought in many ways similar to written language. Syria, Palestine, Sumeria, Anatolia, and the Levant were perhaps lesser luminaries, but they blazed a trail like a comet and, in regard to ethnobotanical data, made contributions as important as those of Egypt and Mesopotamia.

It is important to understand that early civilizations tied artistic expression to religion and that this religion was based upon magic—the magic that comes from grain, from brewing, from states of elevated consciousness associated with plants, from pain relievers, from healing herbs, and from resinous plants for embalming the body. In brief, the art of this early period and of these cultures is a revelation of riches for the ethnobotanist.

In this paper, I would not propose to do the work of the anthropologist, archaeologist, or theologian. Instead, I will suggest, from their discoveries, thematic materials that either have been neglected or have been subjected to alternative interpretations or to an extension of ideas that have been only partially formulated.

Egypt and Sumeria share the trait of being two great river valleys in which agriculture could flourish through silting. No civilization develops in the absence of a stable agricultural base. In Egypt, the progressive aridity of North Africa and the Levant drove peoples into the Nile Delta and thus became the determining factor as to where a settled existence [95] might emerge. Likewise in Mesopotamia, the Sumerians, a non-Semitic and non-Indo-European people, at the beginning of the third millennium B.C. gave birth to an independent art that reflected their preoccupations during this preliterate period. It would be yet another seven centuries before writing would appear in clay tabature, but the vessels of this epoch are revealing in form, in floral patterns, and in the animals depicted. These independent creations are in many ways similar to the vessels found in the escarpments and caves that escaped the periodic inundation of the Nile Delta.

Mesopotamia was settled by people who left the increasingly arid Persian Gulf region and who had earlier made their homes in the Iranian highlands. In their new homeland, they settled on islands and banks around marshes and relied upon annual flooding of the rivers, as well as on their own irrigation ditches, in which they probably cultivated small fish and edible aquatics such as the boiled rhizomes of *Nymphaea* species. The silting of vast areas allowed the planting of barley and wheat. Reed-clay huts rapidly gave way to an astonishing originality in terra-cotta and in brick architecture. From this period, we have two art forms: pottery that goes beyond ornamentation (meaningfully painted and incised) and figurines. Since the discovery of these two forms, weavings with designs have been found at Eridu in a grave dating to 3500 B.C.

Persepolis and Susa provide the first example of brush painting on pottery that goes beyond ornamentation. By the end of the second millennium B.C., the vessels are of exceedingly varied form. The designs are plant and animal motifs, and occasionally a human figure. It is hard to agree with Lloyd (1961, p. 302) that the appearance of the

human form, such as a hunter with a bow, has the sole function of filling a gap in a design. The compositions are too well conceived to permit such "gaps" and, as Coe (1973) has said of the Maya, these people did not decorate; rather they depicted reality in all their art and artifacts. Certainly, the hunter with his bow becomes a focal figure in a civilization that is still hunting-gathering; his vocation is pivotal to the survival of the civilization. Likewise, Lloyd (1961, p. 302) referred to depictions of beasts and birds as being "irrelevant, since the painter himself, concerned only with its decorative value, may well have been ignorant of its traditional significance." My response is this: we need not concern ourselves with traditional themes in such an early civilization; rather we must see these people as depicting their reality and certainly not merely decorating.

Fish were a primary food source. The ibis may be viewed in the context in which birds have been viewed in early civilizations: as shamanic manifestations. The concept extends from the raven of the early Eskimos to the dove-Holy Ghost theme in early Christian iconography and hagiography. Horses, birds, dogs, fish, and floral motifs are treated by Lloyd (1961, p.24, fig.6) as "mere hieroglyphs." Such hieroglyphs are precursors of language and were the embodiment of thought of the time; the facile dismissal of such themes is unfortunate. Lloyd's assertion that "the great majority (of animal figures) are crudely made playthings for children and of no artistic interest" [pp. 24-25] contrasts with his statement that those which are based upon human forms place them in the category of cult objects.

If ethnobotanists have made one great contribution, it is, I believe, to rethink these things that previously have been considered unworthy of serious consideration. It is not necessary to give excessively plastic expression to these abstracted ideas to find them meaningful. In one polychrome bowl of Tell Halaf ware from northern Mesopotamia, a central floral motif of anthers surrounded by numerous petals suggests a water lily or *Nymphaea*. While such identity is tentative, the water lily is a prime contender for any illustration of marshland plants. Further, the narcotic qualities of the flowers (Emboden 1981, 1982a, 1982b) and the edibility of the rhizome after boiling and leaching would [96] make it a floral emblem *par excellence*, telling us much about life and religion, as opposed to the writing of the Al 'Ubaid phase of Mesopotamian development. This tablature was reserved specifically for the purpose of inventory of goods and administration, but in it we are able to identify aspects of ethnobotany, such as payment in grain, bread, and beer, which give us a glimpse of the role of plants in an emerging civilization.

The earliest records from the ancient Near East indicate that healing was accomplished by incantations and plants; both were seen as ridding the ailing body of demonic possession. Persons capable of eliciting in themselves and others states of hypnosis, delirium, or psychological transcendence made up a caste of shamans who mediated the journey of the spirit from the realm of the seen to that of the unseen and whose powers to cast out demons resided in numerous plants. Each plant was known by a name that more often characterized power than it described plant morphology or attributes.

Babylonian medicine most probably was carried into eastern Mesopotamia and Assyria by caravan routes. We know that a number of the plants mentioned in Assyrian tablature are Sumerian. One Babylonian record dating to 2250 B.C. indicates that Babylonia and Egypt then had a trade in drugs and that most of these were oils, gums, and resins. Oils provided a matrix for the carriage of several kinds of drugs.

Babylonian and Assyrian medicine is known primarily through an assemblage of clay tablets from the library of the palace of Assurbanipal, the Assyrian king who ruled Nineveh from 668 to 626 B.C. About 800 pieces of these tablets consist of medical texts that are believed to be of Babylonian origin in thought and that refer to a period between 3000 and 2000 B.C. Evidence to that end, in the absence of a written language, must come from art and artifacts: pottery shards, textile patterns, paintings, implements, stelae, statuary, and even architectural layout. The ethnobotanist must regard all these as tools to the unlocking of the complex pattern of plant use in these earliest of civilizations. The alternative is to use derivative texts, which in some instances may be misleading. The union of art and artifact with later writings provides a base for understanding the earliest uses of plants and plant products. Chemistry may further validate finds, such as residues in unguent jars.

Thompson (1924) cited about 250 drugs of vegetable origin as present in the Assurbanipal tablet. These are, however, compounded and often represent diverse combinations of important plants. Some can be identified; others must remain unknown, owing to the absence of relevant figures and morphological data. It should be noted that only 120 mineral substances are mentioned as medicaments, thus placing plants in the forefront of early medicine. According to the translations of R. Campbell Thompson, these plants include almond (oil), asafoetida, calendula, chamomile, ergot, fennel, henbane, myrrh, liquorice, lupine, mandrake, opium poppy, pomegranate, saffron, and turmeric. *Cannabis*, which figures prominently in healing in China and India, also would have been a major element of barter along the early trade routes leading into and out of Assyria.

Poultices of plant substances were common, and there is every reason to believe that were efficacious. Turnips were kneaded with milk to make a poultice paste, as were barley and wheat flours. It is worth noting that "rotten grain" was prescribed. While this may have been a practice to help conserve fresh grain, it also served to introduce fungus-infected grains to the areas of wounds. These fungi undoubtedly produced some antibiotics that assisted the healing process of the poultice.

Stomach pains seem to figure high on the list of common complaints, and to this end the family Apiaceae is most commonly recommended for such ailments. Herbs, seeds, roots, and resins frequently were macerated and put into beer or wine as a method of dispersing oils and other components that might not have been soluble in water. Oils, honey, and herbs were mixed with wine to be administered by clyster. Enemas, both warm and cold, are registered in this early tablet.

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Disease is called "the hand of the spirit demon" in this codified material from Assurbanipal, and one of the common ways of driving out the spirit is fumigation. All oil-producing plants may be placed on hot coals to produce fragrant smoke. In this context, it is significant to note that the majority of plant oils investigated have bactericidal or bacteriostatic properties, as well as fungistatic virtues, and that as fumigants they no doubt served the purpose for which they were used. This ancient ritual has come down to the censers of the contemporary Catholic church and the spicers that are found in Orthodox synagogues. Wherever crowds of people gathered, ritual purification of the air was conducted to drive out demons. In reality, the custom served to discourage the dissemination of disease-causing organisms. In the same manner, fragrant plants laden with volatile oils were placed upon the floors of temples and houses to be crushed under foot, thus releasing these oils into the air—shades of the aerosols that dominate Western homes!

It is worth noting that the healers were not all men. One of the earliest Babylonian tablets from Nippa, dating from the kings of the Babylonian dynasty of circa 2000 B.C., mentions a shaman as Pir-Napistum of the school of healing of Eridu. He is called to heal but designates the task to his wife, a healing priestess. For a comatose patient she makes a vegetable and herbal poultice and cooks it in water. The mass placed upon the patient's head causes him to awaken, and he is then instructed to eat the medicinal concoction. This "magic food" recalls the practices of Native Americans who did not distinguish between food and medicine but were concerned with plants as "power" (Vogel 1970, p. 583).

By contrast, Egyptian hieroglyphs correspond to the emergence of the dynastic periods and virtually explode with a wealth of information about religion, politics, predynastic periods, and most important, agriculture. The information is incised in stone in Egyptian pre-dynastic art and only later is found in papyri.

Of this period, one of the most exquisite and informative intaglio pieces is an enormous, presumably votive mace-head from Hierakonpolis (in the Ashmolean Museum) celebrating the Scorpion King of Upper Egypt. Anthropologists have concentrated on the activities of this Scorpion King in opening a canal and consolidating the Upper Egyptian kingdoms, and on the mace as an emblem of power akin to the scepter of contemporary coronations. Apart from this overt interpretation and signature of high office, attention should be drawn to the form of the piece, its relief, and its intaglio iconography. True to the typical mace-head, it is obovoid and drilled; however, the concentric rings (the first to cap the mace-head) have between them an entire circle of horizontal

lines in relief. Below are successive layers of depictions interrupted by stately palms. Plants are shown having globose heads but no leaves.

Is it possible that this mace-head is a modified opium poppy capsule? It has circumscissile dehiscence as a motif and the aforementioned stylized plants. If this be the case, the appearance of an opium poppy in this area would be in opposition to the studies of Krikorian (1975), who claimed that if we are to validate the opium poppy as a plant of the ancient Near East, we should have evidence in the form of the seeds or capsules themselves. Seeds are so small as to disappear easily; both seeds and capsule probably would deteriorate over thousands of years. Perhaps the finest records are those incised in stone. Any such assertion, however, must be taken as a hypothesis requiring further evidence for validation.

Papaver somniferum is widely accepted to be the result of domestication of the wild *P. setigerum*, but a time-scale for such an event is imperfectly known. Poppy seeds and pods have been found in bogs and lakes of the third millennium B.C. in north central Europe. Gongora (1868) wrote of finding 55,000-year-old poppy capsules and seeds in a limestone cave near the area of Spain now known as Granada, but he saw these only as symbols and neglected their psychoactive properties. The seeds are nutritious and a fine source of both proteins and oils, while the unripe fruit latex provides opium.

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Thompson (1924) asserted that the Akkadian word *irru* was used to designate the opium poppy. While his philological reasoning was sound, his errors in the identification of other plants led to a rather generalized criticism of his scholarship. Thompson believed that there were cognates in the Sumerian texts, but Krikorian (1975) refuted this suggestion on philological grounds. Kritikos and Papadaki (1967) cited R. Dougherty, former curator of the Babylonian Collection at Yale University, to support the contention that the opium poppy was known to the Sumerians in the third millennium B.C. Those who take exception to the *Hul Gil* ideograms must contend, however, with the union of these glyphs with associated quotations, cited by Thompson, in which this plant is presented with such connections as this: "Early in this morning old women, boys and girls collect the juice, scraping it off the notches (of the poppy capsule) with a small iron blade and place it within a clay receptacle." Sonnendecker (1962) asserted that the *Hul Gil* ideograms may be found in Sumerian tablets of the fourth millennium B.C. Marinates (1948, p. 85) cited the goddess Nisaba of Babylonia and Assyria as portrayed with opium poppies growing out of her shoulders!

In the absence of any seed or capsules from this early date, we are left with conjecture and debate as to the real antiquity of the opium poppy in this region. Nonetheless, the plant is mentioned forty-two times in tablature of the temple of Assurbanipal.

Ancient Uruk or Warka has given us an extraordinary stone vase upon which plants are figured in the lower register [Figure 1. [Images of the Warka Vase](#)]. This rare find from the alluvial plains of southern Iraq depicts a religious scene incised in alabaster, the figures being left in relief. The plant forms are varied; all have leaves and flowers or fruits, but the level of stylization precludes identification. Given, in the vase, the tendency toward the depiction of mythical and monstrous beasts, we may well expect to encounter equally mythical plants, which have no counterpart in the real world. On the other hand, the very nature of the technique limits the details that can be successfully expressed. One wonders what important plants these might be.

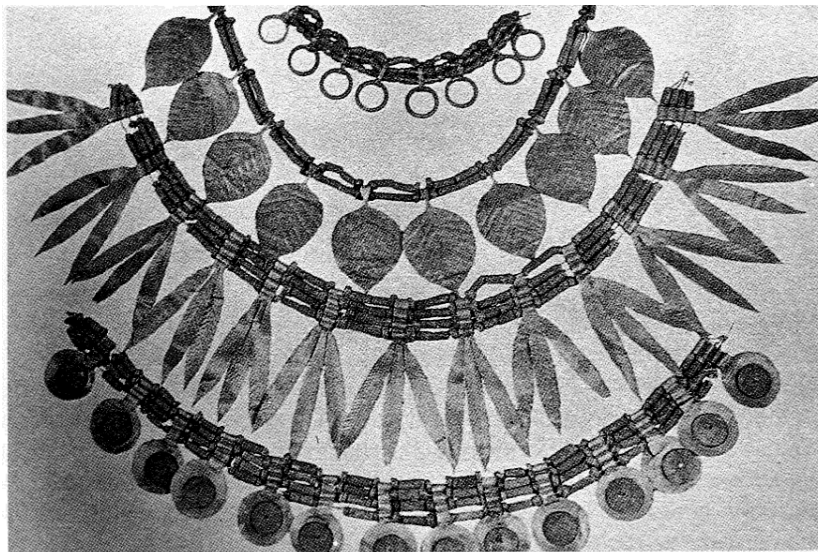
Any evidence that might be used to link Egypt and Mesopotamia during the final centuries of the fourth millennium B.C. must be found by way of resemblances in art, architecture, pictographic writing, and the conventions expressed in all these. It is very difficult to account for all the similarities, and evidence for physical contact between these anthropologically unrelated peoples is equivocal at best. Also, we are overwhelmed by the amount of tomb intaglio and murals from Egypt, which far exceeds the entire [99] corresponding anthropological and archeological remains of all the other collective lands of the ancient Near East.

In the third millennium B.C., Sumerian civilization was flourishing in the alluvial basin at the head of the Persian Gulf as an amalgamation of city-states (much like the Classical and post-Classical Maya civilization), each ruled by an oligarchy. This is the early dynastic period of Sumeria, with Ur, Erech, and Kish as three of its leading cities. Agriculture progressed as the result of irrigation canals that served to move people and objects, as well as rich muck and water, to parched lands. There can be little doubt that the small fish of these canals were netted as food and that the aquatic rhizomes of *Nymphaea*, when boiled and leached, could provide a crude carbohydrate. The same rhizomes, when raw, or the flower buds, when macerated, could provide a psychoactive decoction (Emboden 1982a).

A series of cylinders or rollers cut in intaglio and rolled upon pitch or clay leaves records daily life and religious activities. On one such cylinder, there is incised the figure of a plant with three giant flower buds emerging from five mounds (rhizomes or bulbs?) and protected by crouching, masked bulls. Human figures are on either side of the bull-minotaurs, protecting them from the attack of some monstrous bird. The three flowers strongly suggest the repeated early dynastic symbol of ancient Egypt in which this sacred trinity of flowers is found with a very high frequency (Bands 1953; Emboden 1981).

One of the great treasures of early dynastic Ur is a headdress of leaves of beaten gold and three large flowers with eight petals and a center of carnelian. The leaves are obovate with acuminate tips and may not relate to the flowers. The diameter of the flowers being approximately 12 to 15 centimeters (5 to 6 inches) suggests that they may represent the water lily or perhaps the opium poppy with the carnelian being interpreted as the capsule contained within the corolla. With this headdress, found by the Woolley Expedition, was a necklace of leaves that are obovate with acuminate tips and another rank of leaves in beaten gold that strongly suggest *Cannabis*.

Figure 2. Necklace from Ur showing Cannabis-like leaves. Iraq Museum.



Others (Lloyd 1961, p. 88) have suggested willow (*Salix*), but the venation is more like that of *Cannabis*, as is the leaf morphology.

In early dynastic Egypt the flower of *Nymphaea* is regularly found in the headdresses [100] of figures in tomb murals. At Ur, the famous [Ram in a Thicket](#) [Figure 3. Ram (Tammuz) representation. The branched plant has two remaining flowers that suggest *Papaver*. British Museum.] is an emblem of the strength of Tammuz. The goat was an emblem of virility, and the "thicket" is a highly formalized plant of oppositely branched dichotomies of eight appendages. Two of these bear the same eight-petaled, beaten gold flowers with golden centers. The formality of the presentation makes it difficult to visualize the goat as simply a goat. Aspects of a deity mark the animal in its

stance before the sacred plant upon which it rests its hooves. This goat-man is akin to Hellenic satyrs and centaurs. It is clearly a hybridized motif, and the portrayal is of a priestly order.

The ruling class of Mesopotamia was altered by a seemingly peaceful ascendancy of Semitic Akkadians into the ruling classes. Unfortunately, the amount of extant Akkadian art is limited, but the few pieces known to art historians are of extremely high esthetic and technological merit. The Gutti tribes from Iran's mountains overran all Sumeria except Lagash, where the Sumerian tradition seemed to have continued its development toward progressive refinement and naturalistic depiction. During this same time, Egypt was undergoing serious changes as the pharaohs were overthrown by a feudal noble class that brought with it war and anarchy.

Not until the final years of the third millennium [ca. 2000 B.C.] was there an Egyptian revival; it [101] appeared with the initiation of the Middle Kingdom. The cult of Ra was replaced by the Osirian tradition of death and resurrection not unlike the Mesopotamian legends of Tammuz. The importance of this to the anthropologist, archeologist, and ethnobotanist is that with the Osirian tradition came the establishment of refined tomb art in Upper Egypt. Events of ordinary life frequently are portrayed in these tombs, and arid conditions have left much of the tempera painting intact. Brewing of beer, viticulture, oenology, grain harvest, and preoccupation with the sacred water lily are all strongly evident.

According to the mycological researches of R. Gordon Wasson (1970), a people calling themselves Aryans descended from the north through Afghanistan to occupy the Indus valleys. These were Iranians (Aryan being a cognate). In the land from Palestine to Mesopotamia and Iran, settled in succession by the Sumerians, the Hittites, the Mitannians, and finally by the Indo-Iranians or Aryans, there is an amalgamation of shared legend and mythology. It is Wasson's contention that the Gilgamesh legend of the quest for the miraculous herb that is taken from him by a serpent is a common legend reaching throughout Eurasia from as far back as the Stone Age. Wasson asserts that the Soma-Haoma myth relates to the fly-agaric mushroom (*Amanita muscaria*) and that this related to sacred-tree mythology in that the birch tree supports fly-agaric in a mycorrhizal relationship in which fly-agaric is, in a secondary way, the "fruit" of that sacred tree [[Images of the Amanita Muscaria Mushroom](#)].

Amanita muscaria contains ibotenic acid which breaks down to muscimole and muscazone, psychoactive agents that would serve as a fine adjunct to shamanic ecstasis. The fungus does not grow in the areas of the ancient Near East but may have been brought by the invaders as the sacrament that figures in their sacred books, collection of poems, and the *Rig Veda*, and around which much music, liturgy, and philosophy is centered. The Aryan invasion of 3500 years ago, in the second millennium [ca. 1500 B.C.], presumably introduced this plant that subsequently was lost or forgotten about 3000 years ago when its use was abandoned by the priesthood. We are left to wonder why there are no remains or records of this sacred mushroom in any of these areas of contact. Wasson's thesis is most intriguing and possibly correct, but ethnobotanists must continue to look for more clues in every aspect of art and artifact to validate such assertions. Certainly it would be most interesting to add this plant to those many already suggested.

The richness of the Egyptian Middle Kingdom is paralleled by an astonishing period of Mesopotamian art little recoverable from other than a limited cache of rollers or cylinders. Fragments of sculpture, the famous Hammurabi stela, and the great walled temples of Uruk, Kish, Eridu, and Nippur remain. One area, Mari, on the Middle Euphrates, leaves us with the finest remaining statuary and a small number of wall paintings showing palms and trees with enormous, presumably mythical, flowers. The rest of Mesopotamia fell into Kassite (Iranian) hands and inherited the impoverished vestige of the Gutti rule. Imagination became stereotyped. In the second millennium, Assyrian merchants brought Mesopotamia's civilization to Anatolia, and clay tablets indicate that the Anatolian plateau had in it elements of an Indo-European culture, that of the Hittites who would later unite Anatolia in the east.

If the opium poppy had not previously entered Near Eastern civilization, it certainly would have done so at this time. Such a contention may be based in part upon a famous Assyrian fertility seal in which Athirat or Ashera (the Mesopotamian Ishtar) is shown with a magical plant, two priests, and two winged demons with "pollen bags." It is the last that has led to a suggestion that the magical tree is the date palm, which the Assyrians knew to be divided

into sexes. Pollination was practiced as an essentially magical act. The form of the plant, however, is that of either a poppy or a pomegranate, neither of which require deliberate pollination. The pomegranate, because of its copious seed, is an obvious emblem of fertility, while the poppy is emblematic of power, for reason of its conquest over pain and grief. It is for this reason that the poppy goddess of Knossos wears [102] a corona of three poppy capsules. Ishtar is associated more often with magical plants than with fertility, and the temptation is to make the association with the poppy, rather than with the pomegranate.



In both Sumerian and Akkadian myths, Ishtar (Inanna) descends into the underworld (much like the later stories of Persephone), where she undergoes shamanic death, to be rescued three days later by two sexless creatures (the cult of Ishtar-Inanna involved eunuchs) who finally return her to her own city of Erech. Thus, she is associated with the shamanic sleep of death that is the essential quality of the opium poppy. Hence, it is not unrealistic to associate the "Ishtar cylinder" with the poppy. Further evidence derives from the intense preoccupation of Ishtar worship with magic involving plague amulets, exorcism, and later, dream divination.

Plants also figure in these practices. The onion, *Allium*, was used in medicine, divination, and exorcism. Possession, as the result of misdeeds and broken taboos, could lead to the offender being given an onion bulb by a shaman. Each successive layer of the onion represented a misdeed that could be obliterated by peeling the layer and throwing it into a magical fire in which it was burnt to oblivion. This manner of voiding transgressions also symbolized the removal of skin and flesh from the skeleton, a common shamanic theme in diverse cultures.

In a similar manner, wheat and barley made into bread not only were eaten or made into poultices but, when moldy, served a magical purpose. A loaf of bread placed upon the head of an ailing child would draw the sickness, by magic, into the bread. The loaf then would be rubbed down the child's body from head to foot. Ultimately, the loaf would be eaten or thrown to a dog who magically would take up the child's ailments.

Plants figure in the earliest Sumerian and Babylonian mythology, namely, the legend of Gilgamesh. The antiquity of this legend is attested to be about the identification of the father of Agga, king of Kish and foe of Gilgamesh, on

an alabaster bowl, dating to circa 2700 B.C., from the Diyala Valley. Many later versions exist. Fragments of the narrative are dated to nearly the end of the third millennium B.C. In the course of his journey in search of the plant of immortality, the protagonist passes through a magical garden in which grapes of carnelian and lapis lazuli produce a magical wine. In the eleventh tablet, Gilgamesh descends into the sea to find the plant of immortality. On the journey back to his homeland, the plant is taken from him by a serpent. In the last (twelfth) tablet is a fascinating episode involving a willow tree (*Salix*) guarded and coveted by Inanna (Ishtar). Of the many plants that might have figured in such a legend, it is curious that the willow tree should happen to be the most common source of the most popular analgesic medicine. Salicin, found in its young twigs and leaves, removes pain and inflammation and is the antecedent of modern aspirin.

From the Sumerian triumph of architecture, agriculture, art, and cuneiform script, we have by circa 2000 B.C. the barbarian movement into this civilization to shifting some of its finest populace into the Aegean and Anatolian civilizations under Greeks and Hittites. The question still remains, why were these people so vulnerable? Had their civilization already peaked, and, if so, what was the reason for the decline? As with other civilizations, we may look to agriculture.

Prior to 8000 B.C., wheat was a grass common to the Fertile Crescent that was to become Mesopotamia and the cradle of civilization. This wild wheat crossed with a "goat grass"; and the progeny subsequently formed a hybrid known as emmer (*Triticum dicoccum*), the plump grains of which could support a civilization. A subsequent hybridization produced even more heterozygosis and eliminated a brittle rachis that had necessitated hand harvesting. The grain would not shatter from the plant through the action of wind as had the wild form before it.

The Sumerians learned how to cultivate this wheat and also barley, native to that [103] area in diverse forms, and soon were trading grain for lapis lazuli and carnelian. In the Ubaid and Uruk periods, wheat was widely cultivated and was almost a monopoly, but as early as early dynastic times, wheat production began to decline owing to improper and excessive irrigation, as well as to a corresponding salinization of the land. This led to the predominance of barley, which is much more tolerant of excess salt in the soil. Thus, by 3000 B.C., trade routes between Mesopotamia and Iran had to be opened and negotiated through mountain passes and river valleys. By the end of the early dynastic period, a transit trade route was established between south Mesopotamia and the Indus valley.

While art historians tend to speak of the embellishments in art, architecture, and artifacts, ethnobotanists may find considerable other ramifications. Many writers have ignored the extensive agricultural diversity of crop plants and medicinal plants that entered and exited by these extensive land-sea routes. Crops of grain and other food stuffs alone will not suffice to sustain populations for any considerable period of time. The role of medicinal and drug plants is perhaps as important as that of food plants and may have been as significant a factor in the establishment and maintenance of the first civilizations as was the more evident grain.

The Uruk period saw the first appearance of open cast copper chisels. An axe of this period was found in Susiana, and it was bound in linen, attesting to the knowledge of the growing, retting, and removal of fibers of linen from *Linum*. The production of linen sacks allowed grain to be stored under circumstances in which it was less likely to rot (e.g., animal skins or pottery). Fabric came to replace animal skin as the exclusive clothing of these early civilizations. Linen provided the ideal container for grain and artifacts to be carried along difficult trade routes. The ropes tying the sacks shut were sealed with resins or pitch in which cylinders were rolled to leave an impression giving specific categories of information. Cylinder imprints also served to identify early wines and vineyards. Rolled in pine pitch used to seal the amphoras of wine in early Egypt and subsequently in Hellenic civilizations, these cylinder impressions gave the area of cultivation, the cultivator, and the date.

The years surrounding 2500 B.C. are important in that they mark what one might characterize as the end of several early periods. Egypt at this time had just entered the Old Kingdom period, which followed the proto-dynastic period. Mesopotamia was well into its early dynastic phases. Anatolia was in the Second Early Bronze Age. A new kind of sophistication was appearing in most areas of the ancient Near East. Architecture was beginning to have a certain grandeur, ritual was becoming stratified by hierarchies of priests, trade routes were

becoming well established, and the luxuries of life were coming into evidence in increasingly large numbers of nonessential items such as jewelry, nonritual artifacts, elaborate furniture, and all the ornamentation that can be afforded only by an advanced civilization free from subsistence patterns.

As castes grew in hierarchies of priests, the shaman-priest was concerned with prophesy or divination. Egypt had to build diverse centers of religious activity to accommodate the division of labor among the elite. Magical and medical papyri grew in number. Agriculture was well established as a result of inundation and limited crop irrigation by canals. Emmer, flax (*Linum*), two kinds of barley (Upper Egyptian and Lower Egyptian), and, after the Ptolemaic period, wheat became the principal crops. The extraordinary amounts and varieties of beer produced were made not from grain, but from barley bread that was fermented—a far less wasteful practice, since unused bread would be recycled as beer and the leftover mash fed to domestic animals.

The various papyri are often diverse in content. Thus, in the *Book of the Dead*, which presents concepts of death and resurrection, numerous scenes of domestic life give an extraordinarily fine view of all aspects of Egyptian agriculture, viticulture, and oenology. We find in the papyri that large amounts of beer and wine were poured as sacred [104] libations at the time of a death or upon the completion of a monument. The same kind of information is codified in numerous tomb paintings. During the Middle Kingdom and thereafter, every vase, chair, musical instrument, sarcophagus, textile, and weaving contained information concerning either daily life or the afterlife. Most of this was in the form of depictions, and, even in the absence of a Rosetta stone and hieroglyphic understanding, there is a great deal that we could comprehend regarding all thirty dynasties.

One product that is often neglected in discussions of ancient Egypt is oil from crops of the castor bean (*Ricinus communis*). Olive oil was imported, as the tree was not grown there successfully until the Ptolemaic period. Alternative oils for commercial use were the fruit oils of the moringa tree (*Moringa drouhardi*), linseed oil from seeds of *Linum*, oil from the balanos tree (*Balanites aegyptiaca*) as well as sesame and saffron oils. Castor oil was especially important in that, when mixed with natron, it produced a smokeless flame that could be used in homes for lighting and in tombs to allow painters to produce murals. Alternative light sources would have covered the extraordinary art with a coating of soot.

Considerable debate exists over the probability of the opium poppy existing in early dynastic Egypt as well as in Assyria. Gabra (1956) suggested that the word *shepen* refers to poppy and *shepenen* to the opium poppy. These words appear in most medical papyri and in some papyri devoted to magic, notably the *Ebers Papyrus*. Those who argue against a number of "exotics" in early Egypt must take into account that from the late pre-dynastic period, trade in timber and numerous other commodities was accomplished by intercourse with the Levant and the montane regions of Lebanon. Also, as early as the fifth dynasty, expeditions to Punt are recorded, and we have reason to believe that these originated at an even earlier date. While the "land of Punt" has never been firmly located, we know from commodities such as sandalwood, ebony, giraffes, baboons, ivory, leopard skin, and gold that the area or region was most certainly a part of the Somaliland coast. Harbors and ships for import were stationed along the Red Sea. Donkeys brought items of barter from Nubia to the south as far as equatorial Africa. The tomb of Ramses II, 1304-1237 B.C., presents us with a complete depiction of tributes that came from conquered Nubia and places south.

It is a temptation for the ethnobotanist to find psychoactive plants in early dynastic Egypt, and to that end many have tried to place *Cannabis* in this context. The contention that *smsm t*, mentioned in both the *Berlin Papyrus* and *Ebers Papyrus*, corresponds to *Cannabis* is highly unlikely. No mummy has been found wrapped in hemp fiber; no rope from the base of *Cannabis* exists in Egypt from this period. No residues of hashish have been found in any lipid matrices from funerary jars or unguent containers. It was not until the third century A.D., when the Roman emperor Aurelian imposed a tax on an Egyptian fiber, that we can identify hemp. The same may be said for Babylonia (unless one accepts the Waterman thesis advanced in 1930 that *qu-nu-bu*, mentioned during the reign of Esarhaddon in circa 680 B.C., is translatable as *Cannabis*).

By contrast, Gabra (1956) identified opiates in a residue from an "unguent vessel" of the eighteenth dynasty. Both the narcotic *Mandragora autumnalis*, *M. vernalis*, and fruits of *Papaver somniferum* figure in tomb paintings and

vessels of early dynasties and become quite common by the eighteenth dynasty (Emboden 1979). These are found in frequent conjunction with the sacred blue water lily of the Nile marshes, *Nymphaea caerulea*, which has been determined to have narcotic properties much as do its relatives *N. alba*, *N. ampla*, and the related *Nuphar lutea*. The union of three genera, all psychoactive and all involved in a healing presentation, is to be seen in the colored limestone intaglio of Meritaton and Semenkhar.

The full exegesis of psychoactive plants in the context of dynastic Egypt is discussed by Emboden (1979, 1981). The argument is made that these plants and their psychoactive constituents were adjuncts to the state of ecstasis among the priestly castes of ancient [105] Egypt and that they lead us to a very new way of viewing Egyptian art and artifacts, as well as those of other ancient civilizations. A limestone relief of the Amarna period circa 1350 B.C. shows us the healing of King Semenkhar by his consort Meritaton using *Mandragora* and *Nymphaea*; this is a fine example of the specific context of these plants. These plant motifs appear again in the eighteenth dynasty portrait of [Tutankhamen on his throne with his queen](#). [Figure 4. Throne chair of Tutankhamen (Post Amarna) depicting his queen healing him using *Mandragora* and *Nymphaea*. Cairo Museum.]

One bit of iconography that still puzzles Egyptologists is the depiction of "Lady Tuth-Shena" on the stela in which she is before the god Horus. Emanating from the sun disc on Horus's head are five "rays" of tubular flowers that strongly suggest *Datura*.

Figure 5. Tuth-Shena in awe of the god Horus, who emits rays of *Datura* from the sun disc on his head.



Since *Datura* is pantemperate and pantropical, the genus could not be considered scarce in any region. It is also a genus with easily identifiable virtues. It has been used in every area in which it is known, in rites of passage and in diverse forms of shamanism. Its psychoactive properties are extraordinary, and one of the usual modalities in the *Datura* experience is that of mystical flight, an out-of-the-body sensation.

This explanation, like so many others relating to Tuth-Shena and Horus, might seem specious were it not for the other, associated plants that have psychoactive properties: the central flower and leaf of *Nymphaea caerulea*; at the foot of Horus, the unguent jar wrapped with the narcotic water lily bud; the strand of grapes and their leaves hanging from the opposite side of the supporting pedestal upon which offerings rest; the four repeated [106] representations of a cleft water lily leaf in the series of glyphs at the right-hand margin. It is the realm of the dead, evidenced by the resin cone on the head of Tuth-Shena. The light is the light of Horus, realized in the psychoactive flowers of *Datura* which "illuminate" Tuth-Shena in allegorical fashion. It is the power of Horus before which she throws up her hands in awe. *Vitis*, *Nymphaea*, and *Datura* are the intoxicating elements portrayed in this scene of shamanic manifestation.

It is perhaps by coincidence that the frequency of portrayal of psychogenic plants is correlated with the level of development of ancient civilizations, but I do not think so. A shamanic caste appears and, subsequently, there is further shamanic stratification, the adjuncts to these priestly offices—that is to say, psychoactive plants—increase. The length of the associated rituals is progressively increased, and the litanies or magical incantations become hypertrophied. We can see the same thing among the Maya. It parallels the complexity of medicine and medicinal practices, for all these are inseparable at a certain level. They are manifestations of belief systems that are enhanced by altered states of consciousness.

In conclusion, rather than to try to elucidate the complexity of ancient agricultural practices, it may be more appropriate to comment on certain categories of plants important to a settled state of existence, and on the inclusion of greater numbers of plants with psychoactive properties as a civilization evolves. The best place to find these plant species may not be in cuneiform script or in the hieroglyphics of papyri, but in the art and artifacts of the civilization. This is especially necessary for the ancient Near East, where ethnobotanical evaluation has been virtually absent.

[107]

Bibliography

Coe, M. 1973. *The Maya Scribe and His World*. New York: The Grolier Club.

Emboden, W. A. 1979. [The Sacred Narcotic Water Lily of the Nile: *Nymphaea caerulea* Sav.](#) *Economic Botany* 33(1): 395-407.

— 1981. "Transcultural use of narcotic water lilies in ancient Egyptian and Maya drug ritual," *Journal of Ethnopharmacology* 3: 39-83.

— 1982a. "The mushroom and the water lily: Literary and pictorial evidence for *Nymphaea* as a ritual psychotogen in Mesoamerica," *Journal of Ethnopharmacology* 5:139-148.

— 1982b. "The water lily and the Maya scribe: An ethnobotanical interpretation," *New Scholar* 8:103-127.

Gabra, S. 1956. "Papaver species and opium through the ages," *Bulletin de l'Institut d'Égypte* 37: 39-46.

Gongora, M. 1868. *Antigüedades Prehistóricas de Andalucía*. Madrid: C. Moro.

Krikorian, A. D. 1975. "Was the opium poppy and opium known in the ancient Near East?" *Journal of the History of Biology* 8(1): 95-114.

Kritikos, P. G., and S. P. Papadaki. 1967. ["The History of the Poppy and of Opium and Their Expansion in Antiquity in the Eastern Mediterranean Area,"](#) part I, *Bulletin of Narcotics* 19(3) pp. 17-38; and part II, *Bulletin of Narcotics* 19(4) pp. 5-10.

Lloyd, S. 1961. *The Art of the Ancient Near East*. New York: Frederick A. Praeger.

Marinatos, S. 1948. *The Creto-Mycenaean Religion*. Athens.

Rands, R. L. 1953. "The water lily in Maya art: a complex of alleged Asiatic origin". *Anthropological Papers, Bureau of American Ethnology Bulletin* 151: 75-153.

Sonnendecker, G. 1962. "Emergence of the concept of opiate addiction," *Journal Mondial de Pharmacie* 3: 277.

Thompson, R. C. 1924. *The Assyrian Herbal . . . A Monograph on the Assyrian Vegetable Drugs*. London: Luzac. 8: 42-47.

Vogel, V. J. 1970. *American Indian Medicine*. Norman: University of Oklahoma Press.

Wasson, R. G. 1970. "Soma of the Aryans: An ancient hallucinogen," *Bulletin of Narcotics* 22(3): 25-30.

Gods and Plants in the Classical World

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[131] In cult and myth, many of the gods of the classical world are associated with particular plants. Athena, it was said, discovered the olive as her special tree. The laurel was sacred to Apollo, supposedly as the metamorphosis of the nymph Daphne, who had fled to avoid his amorous embrace. Demeter's chosen gift to the human race was the cultivated sheaf of grain; of equal value, it was thought, was Dionysus's gift of the vine.

Behind these common assignments lies a long tradition of cultural evolution from earlier times when the plants that were the gods' botanical attributes originally had chemical properties that made the plants more than symbolic entheogens; these properties made the plants function psychoactively in rites of shamanism. Thus, even in the classical age, Demeter was still assigned the narcotic poppy, in addition to her sheaf of grain; and her secret barley drink at the Eleusinian Mystery actually induced a visionary experience for her initiates. So, too, Apollo's chemically innocuous laurel was still responsible, if only symbolically, for precipitating the ecstatic seizures of his clairvoyant priestess at the sanctuary of Delphi. And the wine produced from the grape vines of Dionysus was not only an alcoholic inebriant, but it was treated, in social and viticultural rites, as the very embodiment of the god's possessing spirit.

At the dawn of consciousness, we may surmise that humans, apart from the other beasts, recognized the inevitable death awaiting each one and the fearful dependence of the living upon the dead for nourishment and for the continuance of generations. Thus the first science was founded. Edible matter was distinguished from inedible matter, whether poisonous or not useful or taboo, and the earliest perceptions of religion were sensed through those medicinal and magical substances that seemed to mediate between this world and the worlds of the gods and ancestors. These entheogens varied with environment and cultural traditions: availability alone would not suffice to determine a plant's sanctity; meaningful connotations in mythology and religion were also necessary.

For those peoples who took up a settled way of life—tending herds, sowing crops, and founding towns—the dark entombment of the earth became their sacred place where the spirits dwelt. This was the womb into which the seed was entrusted. Earth was the great Mother, the goddess who was the end and the next beginning of all that lives. The darkness of this chthonic realm was mirrored by the recurrent cycles of the night, lighted by the lunar phases that uncannily seemed to correlate with womankind's rhythms. Opiates, the plants that induced an irrationality and a loss of conscious control, were the [132] pathway to Mother Earth's other world. Her special art was the discovery of how to manage the wastes produced by the continuous living of people and herds in the same place, without becoming poisoned by pollutants or famished by depletion of the land's fertility. Pollution had to be transmuted, both magically and in actual fact, into the fertilizing power that would renew Mother Earth for future generations.

In contrast to these settled peoples, nomadic peoples moved on, abandoning one location for another, and often not even burying their dead but hanging them from trees to free their spirits to the winds. Hunting and gathering required that nomadic peoples roam, migrating with the annual journey of the solar disc and seeking totemic kinship with the animals whose wild nature they would have to anticipate if they were to succeed in the hunt. Masculine strength determined precedence in the tribe, for whom god was masculine and the father. Appropriate to such a deity were wild plants, instead of cultivated ones, and his visionary realm was one of celestial enlightenment.

Such generic scenarios about earliest prehistory are misleading simplifications, although they are basically true, read back from mythological traditions and historical indications several millennia later. In what were to become the Greek lands, the Great Mother had already taken up residence, honored by the Minoans and other similar cultures, when the Indo-Europeans with their Great Father Zeus began arriving about the beginning of the second millennium B.C. By the middle of that millennium, the newcomers had taken over many of the previous settlements and assimilated their traditions with those of the earlier inhabitants.

At Mycenae, where modern archaeologists first uncovered traces of Indo-European civilization in Greece, the newcomers had imposed a kingship of their own style and they reinterpreted the name of the place to suit their own traditions. The word *Mycenae* is a feminine plural, like many names of Minoan settlements, which were named for the sisterhoods of the goddess's worshippers. In this case, the settlement was named after the Mycene girls, just as Thebes was named for the Thebe girls and Athens for the Athene girls. Even today the names of these towns are plurals grammatically. The Mycenaean Greeks, however, gave their town a false etymology, associating it with the tradition of the entheogen from their Asiatic homeland, the *mykes* or mushroom. Perseus, the city's refounder, had dynastic ties to another branch of the Indo-European migration, the Persians. Deposing the fearful Queen of the Gorgon sisterhood on the site of what was to become the new city, Perseus was said to have picked the sacred wild mushroom. By this act, Medusa, whose name means queen, lost her power to stupefy and was changed to celestial inspiration in the form of Zeus's daughter Athena and the flying horse Pegasus, who was responsible for numerous fountains, the drink of which liberated the soul for higher visions. In the same manner, Perseus's father, Zeus, would wield the lightning bolt as his weapon of enlightenment against the chthonic forces of darkness, planting, as it was supposed, the fungal entheogen wherever it fell to earth, as he took possession of the new Greek lands. The ensuing reconciliation of Minoans and Greek Mycenaeans would end up with the males in uneasy dominance over the females, but not without due allowance for some role for the traditions of the pre-Indo-Europeans.

The sacred mushroom of Zeus's people, as R. Gordon Wasson has shown, was the *Amanita muscaria*. The Indo-Europeans brought a remembrance of it wherever they migrated from their original home in the central Asian highlands. The Persians, for example, remembered it as *haoma*. Among the Hindus, it was *soma*.

With the passage of time, knowledge of the deity's original botanic identity was forgotten or restricted and substitutes or surrogates were employed, probably because the original was no longer easily obtainable in the new environments. The surrogates at first perpetuated certain attributes of the original, although they often were only symbolically [133] entheogenic. In some ways this perhaps even made these surrogates more appropriate, since the Indo-Europeans were prejudiced against ultimately admitting any corporeal or material component in the experience of spiritual enlightenment.

In India, the earliest surrogate was a mushroom lacking the chemical properties of the original mushroom but symbolically appropriate nonetheless; it functioned ritually as the transmutation of corporeal putrefaction into fragrant spiritual essence through the purifying agency of fire in the making of the Mahavira vessel for the Pravargya sacrifice.

Fungal surrogates are also found in Greek traditions. More often, the color of *Amanita muscaria* and its relatives is remembered, or the warty scabs from its ruptured membrane, or its wild unpredictable manner of growth, or its mycorrhizal associations with certain trees, or even the intoxication of its psychoactive urine constituent. Thus, the color of *Viola odorata* (or *ion* in Greek) made it sacred to the homonymously named Iamid dynasty of clairvoyant priests who replaced earlier priestesses at Olympia when the Indo-Europeans took over the goddess's sanctuary and rededicated it to their god Zeus. Probably, however, no chemically active entheogen was used in the divination practiced by these priests, who employed rational scientific methods of prognosis based on carefully observed omens, instead of the former irrational possession that had characterized the procedure previously.

The same botanic surrogate for the fungal entheogen occurs in the traditions about Apollo's secret son Ion, who was named for the violet and was begotten in a cave at Athens. No plants other than molds can be expected to grow in such a subterranean environment, but the Queen supposedly conceived the child there as she gathered the saffron-hued *Crocus saliva* in the company of her Athena sisterhood. This child of Apollo was instrumental

in shifting Athens from its previous traditions of matriliney to patriliney, as well as for purifying Apollo from the taint of female subservience, his role prior to assuming a new manifestation as a son of Zeus among the family of Olympians. It is Ion who lent his name, by a false etymology, to the "moving" electrical particle, a meaning that belies his former botanic fixity to Earth. This reinterpretation of his name was ancient and involved the myth of how he found a father, as well as his mother.

The luminous radiance of the sacred plant's color not only determined the violet and crocus as suitable surrogates for *Amanita*, but it appears to have been responsible also for the tawny hair that characterized Mycenaean princes such as Menelaus, Odysseus, and Achilles, as well as that of Apollo.

Animal surrogates also recall attributes of *Amanita*. The leopard that is sacred to Dionysus bears the warty scabs of the mushroom's ruptured membrane in the markings of its tawny pelt, and the antlered hind, an animal not found in Greece but from the Indo-European homeland, was sacred to Apollo's sister Artemis. The hind's fondness for *Amanita* and its constituents associates this animal with the entheogen in Siberian shamanism, and the golden antlers of the particular magical beast that belonged to Artemis suggest a botanical treelike surrogate of the appropriate color. Just as Perseus picked a mushroom in supplanting the religion of the goddess, Heracles numbered the plucking of these antlers among the labors he performed in claiming Greece for the religion of his father Zeus. In a similar manner, both Heracles and Perseus plucked golden apples from a sacred tree, just as another hero, Iason (or Jason), plucked the golden fleece. "Fleece" and "apple" are homonymous in Greek, and some traditions remembered that the original for what the heroes harvested from the trees was a mushroom.

The magical properties of the constituent are also recalled in the myth of the hunter Orion, one of several males who once were consorts of the goddess in the persona of Artemis, before she was assimilated to the Olympian family as a daughter of Zeus and twin sister of Apollo, who formerly also had been a version of her consort. Orion was killed for trying to rape a maiden like Artemis from the Indo-European homeland, but in [134] dying was transmuted into a celestial configuration as the constellation. In this newer identity it was claimed that Orion was a son of Zeus, who had inseminated Mother Earth with urine.

The Indo-European migrants, however, could not have failed to note the superior civilization of the Minoan peoples among whom they settled. That awareness, together with a tendency to equate the forward linear course of historical time with evolutionary progress, gave rise to the idea that the past is more primitive than the present and future. Hence, as new surrogates developed, the attributes of *Amanita* were also displaced upon the traditions of the previous inhabitants, equating all that was old as somehow inferior to newer manifestations in the Hellenic age that developed after the reconciliation of the two cultures. The people of the olden times, therefore, were sometimes themselves mushrooms or bore attributes of the entheogen from the original Indo-European homeland, even if in reality they must have been Minoans. At Corinth, for example, a town that also was resettled by the Mycenaean Greeks, the aboriginal populace was said to have been mushroom people before they were transformed into the new human inhabitants.

Settlements such as Mycenae and Athens were said to have been built by the Cyclopes, which were one of several versions of partial, maimed, or half figures in Greek mythology, all of them probably derived, like the one-legged man, from metaphors for *Amanita*. Each Cyclops had a single eye, suggesting the special vision afforded by the entheogen. The Cyclopes were associated with both chthonic and celestial shamanism. In the former, they tended the forge of the limping or one-legged Hephaestus in the heart of volcanoes, which were seen as a pathway to the underworld. In the later shamanic orientation, they were pressed into service of the new religion making Zeus's thunderbolts in that volcanic forge.

The same shift in orientation is represented in the encounter of the Cyclops named Polyphemus and the hero Odysseus. In the cave where Polyphemus is holding him captive, Odysseus introduces the monster to a new experience of intoxication with a powerful wine from Apollo. In escaping from Polyphemus, as in his other adventures, Odysseus is liberated from the chthonic realm to return to his homeland on the island Ithaca and to establish patriliney with his son Telemachus and father Laertes, in a place that during his absence had been in danger of becoming a queendom.

Other notorious half-men are the lame Oedipus, whose myth, like that of Ion, involves the discovery of paternity, and the one-shoed Iason, as well as Theseus, whose father's sandal was a clue that led to the hero's discovery of patriliny, and Achilles, whose heel was his only vulnerability. These lame figures probably derive originally from phallic symbolism of the Earth consort, reinterpreted through resemblance of *Amanita* to an erect phallus, for which common metaphors included the "single eye," the "lame third leg," the "little man," and so on. Sometimes the goddess even becomes involved with surrogates for the mushroom. Such is the case of the maiden (V)iole, who was responsible for the chthonic intoxication of Heracles and who bears the feminine version of Ion's name, with its reference to *Viola odorata*.

More often than through simple equation with primitivism, the Indo-European entheogen was thought to have undergone an essential hybridization from the wild plant of the Asiatic homeland (remembered as the realm of the Hyperboreans) into some cultivated substitute upon its importation and transplantation into the Mediterranean region. Thus the olive, which was supposed to have been discovered by Heracles in the Indo-European homeland, where it is not native, was transplanted to Greece and became the sacred emblem of Athena as daughter of Zeus, replacing her Minoan entheogen. It even became the symbol of Zeus at the Olympian games, after the Mycenaean Greeks took control of the sanctuary.

Among the earlier plants of Athena replaced by the olive was one the Greeks called [135] "horse-mad" or *hippomanes*, *Datura stramonium*, the thorn-apple or jimson weed. This chemically psychoactive entheogen was associated with Athena's primordial, pre-Olympian manifestation as a maddening Gorgon Medusa and it also is characteristic of the goddess in tantric traditions. Just as Athena came to symbolize the higher inspiration of the civilized arts of the Olympian Age, the olive was thought to be superior to its botanical avatar, for it is a cultivated tree, requiring constant pruning to keep it from reverting to the useless wild olive. At Athena's Panathenaic games in Athens, instead of a wreath of olive leaves, which was the prize at Olympia, the victorious athlete received an amphora of oil pressed from the sacred olive trees. This pressing of the surrogate fruit recalls the tradition of the original Indo-European entheogen, called in Vedic lore by the metaphor of the "pressed one," which is the meaning of the name *soma*. The olive was superior not only because it was cultivated whereas *Amanita* was wild, but also because it required the further intervention of scientific procedures of manufacture to release its food.

Athens claimed to have the first olive tree that ever grew, but the same claims was made elsewhere. On the island of Delos, where Apollo and Artemis were reborn into their Olympian identities, the aboriginal olive tree retained ritual connotations of the psychoactive original. In addition to the mock flagellation of pubescent dancers who chewed on its bark in commemoration of earlier times when they would have been sacrificial victims to the goddess, the identity of the Indo-European entheogen that supplanted the Minoan religion was maintained as restricted knowledge. Each year a secret offering of *Amanita* was supposed to have been transmitted through intermediaries from the Hyperborean homeland and presented among the offerings of first fruits sent to Delos from the various Greek cities. These first fruits were symbolic of primitivism, harvested early, before the full crop had ripened to maturity. Among these gifts, the secret offering from the Hyperboreans was the most primitive avatar of the agricultural arts.

Like the olive, Apollo's bay or laurel tree, *Laurus nobilis*, was similarly considered a sacred import or transplantation from the olden times in the traditions of the god's sanctuary at Delphi. It was used for the wreaths to crown victors in the Pythian games commemorating Apollo's triumph over his atavistic former identity at the site, where in pre-Indo-European times (i.e., before Apollo was reborn as a son of Zeus) the god had functioned in chthonic shamanism as a consort of Earth. The games at Delphi included musical and athletic competitions, celebrating contests of male physical superiority and, just as the games of Athena, the harmony of the higher artistic inspiration that dispels the discord of irrational, feminine possessing spirits.

Although the laurel retained the tradition of its psychoactive original in the shamanism of the Pythian priestess, it replaced more sinister plants formerly associated with the pre-Olympian manifestations of Apollo. One of these was aconite (*Aconitum*) or wolfsbane, a metaphoric name that goes back to the Greek nomenclature. Aconite is chemically psychoactive and its flowers, like those of *Viola*, mimic the sacred color of *Amanita*. This fortuitous resemblance facilitated the merging of the Indo-European god with his indigenous chthonic precedent. Wolfsbane or *lykoktonos* originated in the prophet-deity's cults, among the northern Hyperboreans and in what

was known as his other homeland among the so-called wolf-people, the matrilineal Lycians of Asia Minor. This wolf persona became characteristic not only of Apollo's darker nature, but also in general of the recidivous other self of all the heroes who were sons of Zeus. This lupine metaphor is a classical version of the werewolf mythologem and coincides with Indo-European versions of the same phenomenon. In Greek, the "wolf-madness" is rabies, the power of the she-wolf to cause the domestic dog to revert to its wild primordial ancestor. The Olympian Apollo was so dangerously unstable in his new identity that even dogs were excluded from his Delian sanctuary.

[136] Another of Apollo's botanical surrogates was *hyacinthos*, a plant name from the pre-Indo-European language. The Greeks identified it with larkspur, *Delphinium ajacis*, perhaps since the plant's medical efficacy against ectoparasites made it a fitting analogue to their own entheogen, *Amanita*, which has the property of making flies insensate and comatose, hence its common name, fly-agaric. The annual sacrificial victim offered to Apollo at the cliffs on the island of Leukas was similarly thought to rid the populace of an infestation of flies. The Minoan *hyacinthos* may have been a different plant, probably with psychoactive properties. It bears the name of a former version of Apollo, Hyacinthos, one of the many lamented males who were mourned as dying consorts of the goddess. Apollo, in the common mythological pattern of replacement, accidentally killed his own former persona in an incident of misdirected "wind" or inspiration. The plant's flowers were said to resemble the Greek letters for the cry of lament.

The bay tree or *daphne* replaced both the *hyacinthos* and the wolfsbane. The Pythian priestess prepared for her fit of shamanic possession by commemorating the maiden Daphne who was metamorphosed into the tree to avoid the god's courtship. She chewed the leaves of laurel and became possessed by the old, darker version of Apollo, but her shrieks of frenzied rapture were transformed into enigmatic Greek verses by a male priesthood, whose masculine role symbolically was to mediate with the female past traditions and reinterpret the senseless response coherently, as befitted the newer son of Zeus. The type of questions most often answered by the Delphic oracle was consistent with this general theme of reconciliation between female and male mentalities, just as the sanctuary itself mediated between a commemoration of the original chthonic religion and the traditions of the nomadic immigrants. In addition to common problems of marital infertility (and in mythological instances, of patriliney over matriliney), the oracle was often instrumental in advising Greek cities about where new colonizations of male-dominant Hellenic civilization might be settled upon the inhospitable Earth of Mother Nature, just as the wandering Apollo had no place to call his own until he took control of Delphi.

Like the *daphne* and the olive, Poseidon's sacred plant, the celery (or what is commonly called "parsley" by classicists), *Apium graveolens*, apparently was also a chemically innocuous surrogate for a plant that originally functioned in the god's pre-Olympian religion. It, too, symbolized the triumph over the chthonic forces of primitivism. Celery was used to crown the victors in Poseidon's games at Isthmia and Nemea, sanctuaries like Delphi and Olympia that evolved from shamanic rites practiced before the coming of the Indo-Europeans. As at the other sites, the victors probably were once the sacrificial victims offered to the goddess and her consort. The celery, as a surrogate, retained its funeral connotations from those earlier times. Thus, wreaths of celery were used to adorn tombs in the classical age, and it was a homily to say that someone close to death was in need of such a chaplet.

The original entheogen may well have been the poisonous hemlock, *Conium maculatum*, which celery resembles, since hemlock was the drug employed in the classical age as a lethal potion to put criminals to death; because criminals were originally appropriate candidates for human sacrifice, the mode of execution betrays its ritual precedents. As "consort of Earth" (which is the meaning of Poseidon's name), the god in his pre-Olympian persona was a deity of death, linked with the Gorgon identity of Athena as his goddess. Thus, he, like Athena, had equine manifestations, in which form he united sexually with the Medusa.

It is, however, in the paired figures of Demeter and Dionysus that one can see most clearly the full complexity of the pattern involved in the reconciliation of the botanical and religious traditions of the Indo-Europeans and their indigenous predecessors in the Greek lands. These two deities represented the totality of human foodstuffs—Demeter, the dry, and Dionysus, the liquid. Both incorporate commemorations of their avatars in chthonic [137] shamanism, as well as of the fungal entheogen of the Indo-European tradition. For both deities, the evolutionary perspective placed a higher value on their cultivated manifestations in the Hellenic age, as compared to their

wilder, more primitive antecedents. As in other cultures, the mushroom proved to be the perfect archetypal mediating symbol. Its wildness could be tamed into cultivated hybrids, and its obvious phallic configuration could also be viewed as feminine, when the cap becomes concave upon further opening in ripeness. It grows from what looks like an egg within the earth, thus suggesting the idea of resurrection from the nether world, and it thereby in Greek lore had surrogates in various analogous bulb plants, like the crocus, the narcissus, and asphodel, the last being the flower that traditionally grew in the Elysian fields. The chthonic mushroom's sudden appearance after rainfall suggested some causal relationship with the bolt of lightning's point of impact from the celestial realm, hence the union of sky and earth.

Because of the rational bias of classical scholarship, there has been a reluctance to consider the role of entheogens in Greek religion, as though the few researchers who do were somehow imposing their own distorted ideas upon ancient society and "gods in a flowerpot." The fact that the Greeks worshipped Dionysus as a god of intoxication should alone refute any doubt that they recognized something numinous in the experience of chemically induced madness. It is not I, after all, who found a god in my wine cup.

As the Greeks saw it, there were two aspects to this state of altered consciousness caused by the drinking of wine. One was primarily effeminate, regressive, and irrational; the other, virile and inspired, with connotations of the higher arts and of the political and social institutions of their male-dominant culture. The former was the maenadism of the women who tended the god's chthonic avatars in the mountain wildernesses during the nonagricultural season; the latter, the *symposia* or "drinking parties" of the men in the city, where poetry about their mythological heritage was recited and the friendships and alliances, often basically homoerotic (and hence, excluding female) were formed that sustained the male-dominated culture. Whatever women were present at *symposia* belonged to the *hetaera* or prostitute class. They were trained in dancing, poetry, and intellectual arts, and, unlike females of the citizenry, they were adept at the lascivious sexual arousal of their male patrons—talents that would have been deemed threatening in wives and daughters. To this masculine aspect of intoxication belongs also the god's role in renewing cultural identity through the paedeutical function of the theater. In modern terms, the contrast is between the drunken brawl and a cocktail party.

Wine was recognized for what it is, basically a fungal surrogate of the "pressed one," the *soma* of the Vedic tradition. The fungal nature of fermentation was clearly observable and seemed to the ancients to be the same kind of process that occurs in cooking, whereby the raw and primitive is transformed into civilized cuisine, a process, moreover, that was thought to be a sort of putrefaction and, hence, like a resurrection from moldering matter. In fermentation, the wild, unpredictable growth of *Amanita* yielded to the civilizing arts to produce a superior inebriant.

Wine, as the drink of the new age, deposed the god's avatars, all of them from both the Indo-European and Minoan traditions, but as always in Greek religion, the deposed personae must not be dishonored. They were commemorated as part of the deity's total identity. Thus, his previous names were still maintained—like Bacchus for Dionysus—or earlier iconography was perpetuated—like the Gorgon's head that Athena wears as a breastplate, a trophy of her former persona as goddess.

So, too, wine as an intoxicant was not solely the product of the grape's fermentation, but various herbal precedents were part of its "bouquet." Among these was resin, commemorating earlier ferments from the sap of trees that were host to *Amanita*; the pine tree became sacred to Dionysus, and modern Greek wine perpetuates this association as *retsina*. Many of the entheogens sacred to the goddess also found their way into this [138] ancient drink that was a symbolic recapitulatory synthesis of the two cultures' reconciliation, as well as an inebriant. Some of these additives were chemically psychoactive and so intensified the wine's toxicity that it could be drunk safely and properly only when greatly diluted with water. It was all of these that gave wine its "spirit," the ghosts of its constituent gods.

Alcohol itself was a substance unknown to the Greeks, who had no name for it. Our modern term comes from Arabic, where it first was described as the distillates of minerals for cosmetics, thence applied to the liquid distillate of ferments when it was first discovered much later by the alchemists as *aqua vitae*. The Greek word for wine itself, (*w*)*oinos*, appears to be Indo-European, and since viticulture was not native to these people in the Asiatic homeland, it could not originally have described the vinous ferment but rather their own sacred drink.

They applied its name to the newer drink when they encountered it in the course of their southern migrations. Etymologically, it appears to be a metaphor for *Amanita* as a "circular rimmed wheel," which is a typical pictograph for the sacred mushroom in other cultures. Cognates for *woinos* in Latin and modern languages (*vinum*, *vin*, *vino*, *wein*, etc.) are, therefore, derived from the Indo-European verbal root and not assimilated, as one might expect, from whatever linguistic culture originated viticulture.

Symbolically, the vine plant was seen as a botanical evolution of a more primitive, related plant. This avatar was the ivy, *Hedera helix*. Without fermentation, the leaves and berries were reputed to derange the mind. Ivy had not yet succumbed to the hybridization that would culminate in its civilized descendent that, like the olive, through constant pruning and tending would yield its harvest of the succulent grape, instead of the supposedly poisonous tiny berries of its ancestor.

The two aspects of Dionysus, wine and its precedents, had to be commemorated in ritual as well. Thus, in addition to the *symposia* of the men, the female citizenry was periodically released from the strictures of their secluded and protected lives within the innermost quarters of their houses in the city and they took off for their mountain revels as maenads or "madwomen." They formed again into the ancient Minoan sisterhoods of the triform goddess and reverted to wild, uncivilized behavior, and they laid claim again to the dominant role that once was theirs and that now was denied them in their lives within the city.

On the mountains, these women hunted the pre-viticultural manifestations of the god's possessing spirit. Symbolic of this was the ivy. As emblem of their recidivous quest, they bore the Minoan symbol of the *thyrsos*. This was the herbalist's staff, the implement of those who gathered wild plants. It was composed of a fennel stalk stuffed with the leaves of ivy that supposedly they had found. Other plants from olden times also figured in their ritual hunt. Prominent among these was the symbolism of the opium poppy, a plant from the Minoan religion, although it could not be expected to be found actually growing on the mountain and in the wintertime of the revel.

Indo-European precedents also were involved in the symbolism, as is clear from the mythical traditions about the *thyrsos*. Prometheus was said to have first brought the fiery spirit of the celestial enlightenment from the heavens by stealing fire from the Olympians and hiding it in a fennel stalk. Celestial fire as a bolt of lightning, especially when concealed in the herbalist's *thyrsos*, recalls the supposed involvement of lightning in the generation of mushrooms. Prometheus was the creator of the human race and his role was the essential mediation between the chthonic realm of his own origins and the newer realm of the Olympians, whom he tricked into accepting the right of his human creatures to exist. It was he who taught humankind the ritual of the sacrificial meal, whereby the past undergoes transmutation to feed the ongoing evolutionary process. The myths about Prometheus and his brother's son Deucalion, moreover, portray the inception of a new [139] age of humans with the inauguration of the Olympian family of deities with the father Zeus at its head.

Animate surrogates of the primitive god also were objects of the symbolic hunt of the maenads. Such beasts were the leopard, with its suggestive spotted pelt, and burrowing animals, who made their lair in the womb of Mother Earth, like the prolific hare or the phallic serpent, the latter being a reptile with herbalist significance since it was supposed to amass the toxins for its poisonous bite from the plants it lived among. It was claimed that the maenads conducted this hunt without implements, like true primitives, and that like Mother Nature, what they found were their babies. When they caught their prey, they tore it to pieces with their bare hands and ate it raw, without the benefit of the civilizing culinary arts. Again, we are dealing with symbolic events, since it is hard to see how women untrained in hunting could have managed to capture animals barehanded or slaughter their own babies, when apparently the babies were not brought to the revel.

Like the herbalist witches of later times, who were accused of consorting with the devil, the maenads—these respectable ladies from the city—were said to engage in a wiled sexual romp with goatlike men, the ithyphallic satyrs. The brotherhood of satyrs represented the possessing spirit of the primordial Dionysus, since prime among the animal surrogates of the god was the goat. The goat was seen as the natural enemy of the plants tended in the vineyard, and the sacrifice of that animal was the appropriate offering to free Dionysus from his own former identity. The sacrificial meal of goat meat fed the new god and his worshippers in the city upon the

demise of his primitive nature, but in the mountain revel, the god reverted to his role of caprine consort of the goddess from the time before he had been remade into a son of Zeus.

This god of the maenadic revel was also sometimes a bull, remembering the symbolism of the goddess as bovine in Minoan religion. The Indo-European entheogen assimilated the taurine persona as well, as in the Vedic tradition, and the maenads beat upon tympani in their mountain rites to waken the bellowing of *Amanita* as it burst suddenly into fruit with the thunderous sound of an earthquake.

Although the cultivated gardens were dormant in this winter season, the mountains would bloom with the wild flowers that were the god's bulbous surrogates. The Dionysus of the vine had departed, acquiescing to his own demise at the time of the harvest, which was a sacrifice of himself offered for human salvation. The ritual slaughter of the grape had been accomplished like a funeral, accompanied by the lamenting music of flutes; and the harvesters, disguised as satyrs, had sought to blame the murder upon the resurgent atavistic powers that were about to seize control of the world upon the death of the civilized god. The masked harvesters had trod upon the grapes and pressed the bloodlike juice, channeling it into subterranean vats, where it would be entombed, like the god's corpse, and left to molder. As his body lay fermenting through the winter months, the whole world would enter upon its regressive phase. Even the ivy would leave off its trailing, prostrate manner of summertime growth and begin to exert its regained supremacy, growing upright now in sinister mimicry of its usurped hybrid. The version of Dionysus that now took over was his primordial role as the goddess's inseminator; the erect phallus alone was this god's sign. It was borne defiantly in rural carnival-like processions, and the irrepressible lust that it represented defied the accepted norms of civilized urban life.

This was the time when comedies originally were performed. The actors and choral dancers, costumed extravagantly as fantastic metaphors for the ithyphallus that was their prominent emblem, would hold the finger, as it were, up to the leaders of society. They would, in effect, overthrow the city as it was and remake it to the liking of their own baser instincts. Typical of the comic plot, the lower elements of society—or even women—would take control, and all that was sacred, including the Olympian gods, would have to yield. The unrestrained libido ruled the world.

[140] When the fermentation, however, was completed, at the threshold of spring, the wilder spirit of the god's avatars would have, in turn, to give way as the cultivated god triumphed over death and returned from the grave in the guise of a divinely newborn infant, repeating the age-old miracle of the rebirth of the goddess's former consort as her son. This was not the same child as in olden times. This new Dionysus of the Hellenic age was destined eventually to resurrect even his mother and elevate her, like the Assumption later of the Blessed Virgin, to the celestial realm.

Dionysus's triumph opened, as well, the gates of the nether world, like an earlier example of Christ, and with him from the grave returned the spirits of all the dear departed. This moment, when the new wine was first breached, was celebrated as a communal banquet attended by both the living and the dead. Special table manners were in effect for this feast to ensure the proper separation of ghostly corruption and human life. These included chewing buckthorn (*Rhamnus*) as a laxative to purge the body of its own pollution, and eating and drinking from separate facilities to keep the ghosts at a respectable distance. The myths that traced the etiology of this festival recalled the coming of a new age of humans after the great flood, the redemption from madness caused by female chthonic powers, and the shift from matriliney to patriliney.

The young children of the citizenry were seen as manifestations of the infant god's miracle. At the age of three or four, the children would be indoctrinated into the metaphysical meaning of the wine as they drank it for their first experience of inebriation. We see these drunken children depicted on vase paintings as they play among the gravestones or impersonate their elders in performing various Dionysian rituals, such as the pole dance and the sacred marriage.

This symbolic renewal of the world was the context originally for the god's other type of drama, his tragedies, which would be performed at the contests held later in the spring, although the popularity of these festivals was so great that the distinction was soon blurred, so that both comedy and tragedy eventually were produced at each. Tragedy etymologically is the "goat song"; it was sung for the goat who was the sacrificial victim, the

honored primitive persona of the god, who had to fall before the ascendancy of his own better self. Typically, the plot of a tragedy presents a hero whose victory would endanger the fundamental stability of the Olympian order, and hence, the hero's failure is of greater value than his personal success. The choice, for example, is between an Oedipus or an Apollo, and the worlds that each represents.

In these festivals of drama, in which all the roles were enacted by men, we see a different kind of madness. Instead of the maenadic derangement of the women in the regressive mountain revel, the male actors channeled the experience of ghostly possession into a form that furthered the evolution of the norms of Hellenic culture.

The goddess Demeter underwent a similar reconciliation of her past botanic identities with her newer Hellenic and Olympian manifestation. As "Mother Deo," which is the meaning of her name, she was recognized by the arriving Indo-Europeans as the mother goddess, with one of her pre-Greek names, and she was assimilated into the Olympian family as a sister and mate of Zeus.

Another of Demeter's names from the Minoan tradition was Persephone. Since the latter, like Deo, is not Indo-European, it has no known etymology, but the Greeks could see in it the false meaning of "deadly." This version of the goddess was assimilated as Zeus's daughter by Demeter, and her myth depicts how, unlike her mother, she was denied Olympian status and relegated to the chthonic realm as a goddess of death and resurgent life from the nether house of her consort Hades.

Many were the plants sacred to the Demeter-Persephone duo: opiates, like the poppy, for which the wild rose later became a symbolic surrogate, by virtue of its similar flower and capsulelike hips, as did also the pomegranate, which it resembles; and deranging [141] herbs, like *Datura* and henbane (*Hyocyamus niger*), which was named in Greek for her sacred animal, the sow, a carnivorous beast that responds to the male scent of humans. By the classical age, henbane had become an abused drug by the younger generation.

As an Olympian, the goddess and her daughter were symbolized by the cultivated staff of barley. This was Demeter's antithesis to the wine of Dionysus. Hers was the dry stuff with which she nourished humankind, but like the vine, barley, too, had its atavistic precedent. This was seen as the wild and inedible weedy grass, *Lolium temulentum*, called "drunken lolium" in Latin botanic nomenclature because of the poisonous fungus (*Claviceps purpurea*) with which it is commonly infested. This fungus or ergot was called "rust" in Greek, as in English, because its reddening corruption overtakes the host kernels of grain in much the same way that the oxide of iron destroys the serviceable metal and seems to pull it back to the useless ore from which it had been manufactured. This same corruption seemed to spread from the weed to the cultivated grains, making them inedible like their ancestor. Barley, it was thought, would actually revert to lolium if it were not correctly tended to reinforce its evolutionary hybridization.

As with Dionysus, the fungus again was the ideal mediator. Grain, too, ferments, and the apparent putrefaction yields the leavening for the cooked loaf. The same triumph over atavism was seen in the transmutation of offal and dead matter into the renewed fertility of the plowland, a miracle that was commemorated by the ritual slaughter of the sow, whose decomposed remains were spread upon the fields as manure. As the Indo-European migrants traveled through the grain-growing lands to the north and east on their way toward Greece, they apparently found an early surrogate for their sacred plant in the chemical properties of *Claviceps*, the color of which perpetuated the sanctity of the original entheogen, and from which, by simple water solution, a form of LSD (lysergic acid di-ethylamide) can be easily separated from the other poisonous alkaloids of the ergot.

In the celebration of the Eleusinian Mysteries, which derive from Minoan precedents but which, like the other great religions of the Hellenic age, reconcile the two traditions of chthonic and celestial shamanism, ergot was employed in a drink that induced a mystical vision. The worshippers gathered at a place sacred to the goddess, beside the entrance to a subterranean tunnel considered to be one of the gateways to the nether world. There, at the village of Eleusis, near Athens, in the cavernous great Hall of Initiation, the initiates drank the potion and experienced a spiritual journey together through that passageway into the chthonic other world and then returned resurrected with the goddess, who had borne a matrilineal son during her underworld sojourn. Because of this communal rebirth, the worshippers came to feel that death, as Paul was later to preach of the Christian mystery,

had lost its sting. Instead of some demonic horror, they saw that the Lord of Death, who was Persephone's son, was bound to them by ties of friendship and reciprocal hospitality in his and their own homesteads.

The initiates were sworn to secrecy under pain of death, but the myth that told of the founding of the religion was profane knowledge, including the part that listed the ingredients for the sacred potion. According to the myth, Persephone had been picking wild flowers on the frontier of this world, as queen among a maiden sisterhood, when she happened upon a particular plant, the *narkissos*. The plant's name, as we should expect, is pre-Greek, and hence its etymology is unknown, but the word was assimilated into Greek and its properties as a drug are responsible for its meaning as a "narcotic." This Minoan entheogen induced the spiritual possession that abducted Persephone to the nether world as a maenadic mate of Hades. At Eleusis, this abduction without the mother's consent was rectified by the elevation of the lost maiden to the rank of wedded wife and mother. This evolution from illicitly abducted maiden to legitimate wife culminated in the institution of the civilizing rites of agriculture. It is Persephone's mysterious son, under the name of Triptolemus, who teaches humankind the art of tending barley.

[142] The Eleusinian potion was a symbolic drink, like wine, tracing the transition from primitivism to culture and mediating the Indo-European and Minoan religious traditions. The identity of three ingredients was not restricted knowledge. These were pennyroyal (*Mentha pulegium*), water, and barley—none of which could have been chemically responsible for the mystery experience. The water is obviously the inert medium that binds the two plants, which represent the polarity that is reconciled through the vision provided by the mystery.

Pennyroyal is a pungent aromatic mint, a wild plant that in Greek botanical lore is reputed to be an aphrodisiac; the plant's fragrance, like perfume, had connotations for the Greeks of lascivious illicit sexuality rather than of matrimonial duty and fidelity. Pennyroyal is emblematic of Persephone's abduction and the ensuing wrath of her deserted mother Demeter, who could neither accept that her daughter be a concubine nor countenance losing her to a male's control.

Barley represents the antithesis. It is the cultivated plant, symbolic of Demeter's acceptance of the periodic separation from her daughter, just as the seed is entrusted to earth only as a temporary prelude to the renewal of life and the return of Persephone with her son. Demeter becomes reconciled to her own role in the celestial realm as an Olympian, while her former self, in the persona of her daughter Persephone, resides in the chthonic realm, bound to her by family ties and cyclical visitation.

The secret ingredient of the potion—the one that made it serviceable as an abused substance—was ergot. It mediates between the polarities of wild and cultivated and of the Minoan and Indo-European traditions of shamanism. *Amanita* has no seed and defies attempts to control its unpredictable growth, but the ergot that spreads from lolium to the kernels of barley, threatening to pull the cultivated foodstuff back into primitivism, produces what appears to be an enlarged purplish seed, as the fungal mycelia permeate its host. Under appropriate conditions, the ergot-infested kernel falls to earth and enters its fruiting stage, with mushroom bodies recognizable to the naked eye. *Claviceps* itself is poisonous, but through the intervention of civilizing technique, the entheogenic component is separated into the solution of the potion. Nor can we doubt the association of ergot with the goddess, since "Rust" was one of Demeter's names.

There were two levels to the mystery, hence the plural Eleusinian Mysteries. The Lesser Mystery took place in the maenadic winter and involved the tradition of Persephone's abduction. It ritualized the hunt for *Amanita* or its surrogates. Part of this ceremony was the Sacred Marriage, when the woman who portrayed the role of the Queen, from the old days when Athens was a queendom, performed some secret rite in which she was possessed spiritually by Dionysus in some "taurine" form.

The Greater Mystery occurred in the fall and was experienced by the whole body of the initiates. Instead of the narcosis of the past Minoan tradition of the *narkissos*, a brilliant light of visionary illumination is described as the experience in the darkened Hall of Initiation on the Mystery night, as LSD supplanted sleep with the enlightened sight it induced in the wakeful worshippers huddled within. Although still a chthonic religion of the two goddesses, the Indo-European tradition had accommodated it to its own celestial orientation.

The Eleusinian Mystery was the most prominent initiatory religion in the classical world, but there were others that struck a different balance between the claims of earth and heaven. Some were more chthonic; others, more celestial. In the mysteries of the Kabeiroi, for example, the sacred drink enrolled the initiates into a nether world brotherhood of primordial men. In contrast, the Orphics overemphasized the Indo-European aspiration to liberate the soul from its symbiotic dependence upon the body. Their supposed founder Orpheus inadvertently abandoned his Persephone-like bride permanently in the underworld, and taught his tribesmen to shun all sexual contact with women. His [143] followers sought to purify their bodies to attain eventually a totally spiritual existence through inhaling special herbal fumigations, like Olympians themselves, and through vegetarianism and dietary prohibitions.

Bibliography

Detienne, M. 1979. *Dionysus Slain*. Johns Hopkins. Trans, from 1977 French ed.

Ruck, C. A. P. 1976. On the sacred names of Iamos and Ion: Ethnobotanical referents in the hero's parentage. *Classical Journal* 71(3): 235-52.

Rouner, L. S., ed. 1984. The wild and the cultivated in Greek religion. In *On Nature*. University of Notre Dame. 79-95.

Toporov, N. V. 1985. On the semiotics of mythological conceptions about mushrooms. *Semiotica* 53/54. Trans, from Russian by S. Rudy.

Wasson, R. G. 1968. *Soma: Divine Mushroom of Immortality*. New York: Harcourt, Brace & World.

Wasson, R. G., A. Hofmann, and C. A. P. Ruck. 1978. *The Road to Eleusis: Unveiling the Secret of the Mysteries*. With a new translation of the *Homeric Hymn to Demeter* by D. Staples. New York: Harcourt Brace Jovanovich.

Wasson, R. G., S. Kramrisch, J. Ott, and C. A. P. Ruck. 1986. *Persephone's Quest: Entheogens and the Origins of Religion*. New Haven, CT: Yale University Press.